Integration of sustainable development in urban development

A comparison of Linköping and Norrköping

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Abstract
Activities in and connected to cities are responsible for around 70% of the global CO₂ emissions and as the urbanization to cities are likely to increase in forthcoming future, actions to handle this situation are of vital importance. Through the integration of sustainable development in cities’ urban development, this have large potential to improve social, economic and ecological aspects in the cities. Besides being the places where most of the global consumption and emissions come from, it’s in these specific places where essential effects can be reached. There’re, however, difficulties with this, due to that it requires participation and responsibility from all stakeholders in the city. Different cities have different capabilities and conditions to work with sustainable development, which is why this study examine the two cities of Linköping and Norrköping. The study is based on interviews with actors that are closely connected to the urban development in the both cities. The results shows that the cities have different historical background and city structure, causing them to work a bit differently. Furthermore, the result also indicate that the largest challenges are how to handle the transportation issue, conflicts of interests as well as cooperation between different stakeholders.

Keywords
Comprehensive plan, conflicts of interest, cooperation, municipality, sustainable development, urban development.
Introduction

Climate change from greenhouse gases as a result of mainly anthropogenic activities, is by many seen as one of the largest and most difficult challenges for the upcoming future. This has led to a lot different global problems such as for example air and water pollution, resource scarcity and temperature changes. As a result of primarily the use of fossil fuels, the global mean temperature has been increasing throughout the last decades and without a substantial decrease of greenhouse gases, it’s likely that the global mean temperature will go above 2 °C from pre-industrial levels. This would mean that the agreement in Copenhagen Accord (which the largest emitting countries have agreed upon), regarding keeping the global mean temperature below this level, would fail which would result in huge negative impacts on both a global and local scale (Spännhoff, 2014). Gonzalez et al. (2015) is also arguing that if our consumption (of for example fossil fuels, minerals, biomass etc.) over the next 30 years is continuing to grow with same rate of today, it’s likely that the global consumption will be as high as 140 billion tons which is a threefold increase as of today. This will of course also lead to huge negative impacts around the world, where both the human wellbeing and the social welfare will be deeply threatened (Gonzalez et al. 2015). One huge contributing factor to the emissions, are the urban areas or the cities. They are estimated to be responsible for up to 70 % of the global CO₂ emissions annually as well as for reduction of agriculture lands and natural resources (Ameen, Mourshed & Li, 2015). This is also likely to increase, as scientists calculate that the global population living in cities will increase by 20 % to 2050. This will put even higher pressure on the dense urban areas, which will be really vulnerable to climate changes, especially when it comes to the poorer and less developed neighborhoods (Haaland & Van den Bosch, 2015).

A concept that has been well-known and used frequently (since it was defined in the Brundtland Commission 1987) in order to change the current situation, is sustainable development. Sustainable development can be described as a development that occur without compromising future generations’ capability of meeting their needs but at the same time being able to meet the current needs. The philosophy of sustainable development is that the three pillars of sustainable development (social, economy and ecological) are involved and integrated in all decisions and processes, without neglecting one or the other (Abu Bakar & Cheen, 2013). By integrating sustainable development in for example different organizations or cities this is not only positive from an ecological perspective, but also from an economic and social perspective. This due to that it can lead to for example reduced waste generation (due to increased recycling etc.), improved energy efficiency as well as further creation and use of environmentally-friendly services and products (Gonzalez et al. 2015). Many scientists believe that urban development and design are extremely vital when it comes to handling the environmental problems of today and in the future. This due to that these areas have a huge role when it comes to global production, consumption and emissions, but also that it’s in these areas that there can be radical changes and improvements. It’s in these regions that international and national policies and agreements have to be implemented, namely the transformation of policies and goals from a global and national scale to a more regional and local scale. Effectively integrating sustainable development in the urban planning and development, is therefore essential in order to improve the current and future situation.
(McCormick et al. 2013). It however requires commitment and participation from a wide range of different stakeholders (politicians, housing companies, the public etc.), in order to manage a sustainable development in a city, as for example the politicians alone can’t make a change (when it comes to for example behavioral change) (Ameen, Mourshed & Li, 2015). This is further explained as “Different municipal units oversee different activities in the process at different times, which requires an integrated approach, open communication and good cooperation.” (SALAR, SKL and ICLD, 2011:44). Inclusion and cooperation of a broad spectrum of stakeholders are therefore essential when working with sustainability in urban development.

There are though some barriers with integrating sustainable development in the urban development. For example can climate change, global change as well as sustainable development seem as important steps to work with, but it’s nothing that can be managed from a short-term perspective. This has to be an ongoing process which will have an effect later on, but as of today many companies, organizations or municipalities are focusing on other short-term goals which seem more important at this time. However, neglecting factors just because that changes will not be seen in the next upcoming years, might have very negative impacts later on which at that time will be even more difficult to handle (Yuksel, 2012). Furthermore, Holden, Linnerud and Banister (2014) is arguing that the concept of sustainable development have become too complex and extensive, which makes it hard for policymakers in urban areas to handle and to put into planning. This has resulted in that different urban areas with different policymakers interpret sustainable development differently, which lead to that they work with it in dissimilar ways with varying results (Holden, Linnerud & Banister, 2014). In addition, sustainable development can be seen as an ongoing process and for a sustainable city there is no final state, but is more like a many-sided goal that are changing and adjusted after time. Different cities therefore have to adjust their sustainability work according to their own cities’ attributes and possibilities. Furthermore, sharing both unsuccessful and successful attempts and solutions on the path to reach further in the work with sustainable development is also very important as this provide a diversity of options and views of how to manage sustainable development. Thus producing a more holistic and comprehensive path for the sustainability work (Childers et al. 2014). All this is very interesting and is some of the reasons for choosing a comparison between two different cities in this paper, where this paper will see if it differs in their interpretation and work with sustainable development.
Aim
This paper will examining the integration of sustainable development in the urban development of the municipalities of Linköping and Norrköping and critically analyze how the cities currently are working with this issue. The paper is based on an interview study, where a total of fourteen actors have been included. The results from this paper will generate a contribution regarding visualization of the current urban development of the municipalities and of future transitions and strategies that will help the municipalities to a further integration of sustainable development in their urban development.

Research questions
The following research questions will be used in order to help me examining and answering the aim of this paper:

1. How is sustainable development currently integrated in the urban development of Linköping and Norrköping?
2. What are the obstacles when it comes to integrating sustainable development in the urban development process in Linköping and Norrköping?
3. How can sustainable development be further integrated in the urban development process in Linköping and Norrköping?

Limitations
This paper is limited to the two cities Linköping and Norrköping and will be a comparison between them. There are several reasons for choosing these cities. To begin with, the choice of doing an comparison of two cities instead of for example only examine one town (for instance Linköping), is that I want to investigate if there are any difference between how the two towns interpret and integrate sustainable development in the urban development. This, as mentioned earlier, due to that the concept of sustainable development is interpreted and understood very differently from person to person and from organization to organization. By comparing these two adjacent towns, this will be elucidated. Furthermore the cities were selected due to their size and population, as Linköping is the seventh biggest city in Sweden and Norrköping is the tenth biggest city in Sweden. Because of this and the increasing population in the selected cities, it´s interesting to see how Linköping and Norrköping are working with sustainable development in their urban development process. In addition, the selection of cities also depend on logistics, as it´s much easier for me as researcher to make face-to-face interviews with my selected interviewees if the distance to the cities is not too far away. Other cities could have been chosen, but as interview as method is really time-consuming, this probably would lead to that many interviews would be conducted by telephone or email. Personally I prefer face-to-face interviews, as I think they are more fruitful and easier to see the person’s reactions to questions.

Background
In this part, the concept of a city as well as a brief background to the history and transitions of urban development will be described. After that, Linköping’s and Norrköping’s history from
the beginning of the 20\textsuperscript{th} century will be highlighted. Lastly, the concept of a sustainable city and how it have evolved will also be described.

The concept of a city and its functions
The concept of a city is complex as there are many types of descriptions of what a city represents. Smith (2002) gives two different kinds of explanations to a city, namely the functional definition and the demographic definition. Regarding the demographic definition, this can be explained as a permanent, dense and fairly big community consisting of socially mixed individuals. This can be explained as a location where a large population lives in a specific compact area with diverse kinds of social differences and institutions (different ethnic groups and religions, different social classes etc.). The functional definition puts more importance to the meaning that the settlement has in a specific region i.e. activities and institutions that are vital for the region to function. This can be for example economic functions (markets etc.), political functions (city hall etc.) and cultural functions (location of schools and different types of education). There is also a specific distinction between city and town, where towns are smaller communities with lesser urban functions than cities (Smith, 2002).

Emergence and progress of urban development
For the majority of the history of mankind, there haven’t been any cities (at least no permanent ones) as people were living in small communities which were moved from time to time. However, from around 5000 years ago the first so called cities were established (in the ancient region of Mesopotamia) and from that on, there have been continuous and important transitions were these urban areas have developed both from an infrastructural and a sustainability point of view. The reasons for the establishment of urban areas in Mesopotamia, was due to several occasions. One major reason was the establishment of farming, which led to that people didn’t have to move around but could establish a community with a solid food supply. This was differing a lot from earlier smaller communities as these cities contained a lot more people, divided into many different occupations and social classes with a distinct leader/king. It was also in the cities where the religion, economy and the institutional functions were centralized, which made the cities an important gathering place from both an economic, social and cultural point of view. Making the cities dense with defensive walls was also of importance, in order to both defend the people from other hostile people and to not taking up too much of the agricultural lands surrounding the city. How to plan a city is not a modern concept, but it has been permeated the majority of the history of establishments of cities. Things as for example how to manage sanitation was early planned and handled efficiently in many early cities (like for example in the Indus Valley civilization) (Smith, 2002).

The ancient cities of Greece was also carefully planned, not only when it comes to how it was built but also where it was built. The Greeks carefully chose places that where close to fresh water and either fertile land for crops or close to the ocean/lake for fishing. By constructing aqueducts, the location of the cities was made more flexible as it meant that the cities didn’t have to be established on top of the water channels. Furthermore the Greeks also had different types of fresh water resources (cistern, wells etc.), which made them and their cities more
resistant to water shortages and unexpected events to water (diseases etc.). They also introduced efficient sewage systems, which led sewage from the cities to places outside the city where it was used as manure for the crops. This way of managing can be seen as cycle, where waste and sewage are recycled and used for growing different types of crops and trees which in turn are being used for food for animals and people as well as building material. This results in an efficient and sustainable use in the city which makes both the city more resilient and also prevents areas outside the town from being deforested. A type of management quite similar to the one used today in many cities, even though this is something that still could be further improved in many places (Crouch, 1993).

From the ancient Greeks until the end of the 19th century, it’s very noticeable that cities were constructed according to straight lines and grid systems. This is due to several reasons, but it’s believed that with limited abilities to handle the nature (topography etc.), the early people tried to build according to the geometry that the nature didn’t have, namely straight lines. During the Roman Empire, this was further established as a template for how to build cities where inspiration were taken from the square Roman soldier camps. With the introduction of concretes and valves, this sped up the construction of cities as well as made them more durable. Another characteristic was that it was common with two main streets (larger than the other streets) that started from the city gates and where these two streets met, a public square was situated (Ameén, 1985). From around the 1000th century, the medieval towns in Europe were starting to be established and these cities were very incorporated with the church and the huge power it had. The church was therefore a vital part of the cities and was due to this situated in the middle of the cities, next to the town hall and the public square (Nationalencyklopedin, 2016). Even though the cities of the early period of the medieval age wasn’t that characterized by straight lines and grid systems, this was introduced more and more from the 1200th century and forward. As time went on, more and larger cities were established in Europe combined with an increasing population (Ameén, 1985).

There’s, however, some very distinguishable changes that occur with the cities in conjunction with the industrialization (~1900th century). This as a result of that a large amount of industries where established in the cities combined with efficient inventions, which led to a large urbanization that brought people from the countryside to the cities in order to make a living (Nationalencyklopedin, 2016). Since the European cities were facing a huge urbanization of people, this led to a return of the more irregular city plan which was needed in order to come up with new districts for the constantly incoming people. The previously city plan with straight lines and grid systems, was simply not efficient enough for this type of cities. From the end of the 2000th century, this therefore put the end to the grid system, which also was a result due to improved and more efficient ways of constructing which made it possible to adapt the city plan to the nature (topography etc.) (Ameén, 1985). During the 18th and 19th century the industrial cities were designed with high production as a central part of the cities. However, these cities were not designed to handle environmental and health issues generated from the industries, which made the living standards in these cities very low. As a result of this, a transition to so called “sanitary cities” occurred which meant more focus on the human health and security. This were accomplished through for example improving the
water and waste management as well as controlling pollution from the factories (Childers et al. 2014).

**Brief overview of the history of the city of Norrköping from the 20th century and forward**

Norrköping was for a long time considered as one of the fourth largest cities in Sweden and is widely acknowledged for being an industrial city, with a large industrial area that was located in the center of Norrköping until the 1970s. Although Norrköping had its population grown by eight times during the first half of the 19th century, the population growth in Norrköping have been quite low compared to other cities (from the period between the middle of the 19th century and forward). Despite that the population has tripled during the 20th century (from around 40 000 to 120 000 within the municipality of Norrköping), other cities such as Linköping have had a much larger increase in population during the same time period. This is expected to be a result of the composition and problems from Norrköping’s businesses and industries. Other issues connected to this, is that the birth rates have been quite low, combined with rather high rate of mortality. This is believed to be due to both the low living standards during the first half of the 20th century (diseases etc.) as well as an age structure consisting of more old people than young. Furthermore, the rate of people moving in to the city has been fairly low, whereas people moving out from the city has been quite high, which until lately have led to the slow population growth (Norrköpings historia 1900-talet, 2000).

From the beginning of the 20th century, the center of Norrköping was surrounded by three large streets or boulevards (South, North and East Boulevard). At that specific time, most of the settlement was situated in same location as it has been for centuries, even though the amount of people had increased a lot. This made it difficult for the city to expand and led to that small suburbs emerged outside the actual city, which were later further integrated. Until the 1960s, Norrköping was widely known for its substandard housing where overcrowdings were very common. One way to try to handle this situation, was by establishing the first modern city plan (1942). Before this the lack of efficient city plans and clear comprehensive plans, had caused residential areas and transport routes to be established by themselves with no actual plan or strategy behind it. The city plan tried to handle this issue by broaden the streets, connect the different parts of city more efficiently and to handle the poor housing standards. During the 1960s and the national building program, so called “the million-program”, Sweden tried to handle both the lack of residences and the crowded living conditions. One of the cities with the most demolitions of buildings was Norrköping, which earned the city the nickname “a bombed city”. The “the million-program” was very efficient in the sense that it resulted in that the overcrowdings and especially the lack of residences were hugely decreased, which previous attempts had failed to achieve. There were, however, several problems as a result of that the focus of the program was to almost only build fast and a lot of residences etc. whereas other aspects were neglected. A lot of social and technical problems occurred in the newly constructed areas such as increased criminality and technical problems with housings (leaking roofs etc.). Residence areas from this program can still be seen today, with both the positive and negative effects still to be handled (Norrköpings historia 1900-talet, 2000).
Brief overview of the history of the city of Linköping from the 20th century and forward

In end of the 19th century and the beginning of the 20th century, Linköping was classified as a very small city. The city did, however, have an important administrative and central role in the region, as both the governor and the bishop was located here. The population was less than 15000 (slightly bigger if some of the suburbs were included) and the city didn’t have any particular industries, but was more of a farming town. During the end of 20th century the population has reached around 150 000 people (in the municipality of Linköping), which is a substantial increase by almost nine times. The first actual industrial breakthrough in city was 1907, when the railroad company ASJ established their industry in the area of Tannefors (a district in Linköping). From then other industries started to grow, where the largest ones was connected to textile, metal, wood and food management. A very important part in the development of Linköping, was the establishment of SAAB, which became a large employer as well as an essential actor then and is still of today. This combined with the military units that were established in the city in the beginning of the 2000th century and forward, increased the expansion and population of Linköping (Linköpings historia 1900-talet, 1999).

In the early decades of the 20th century, Linköping was facing several problems that needed to be solved through a more comprehensive and long term city planning. Problems were for example increased urbanization (causing lack of residences and overcrowding) and ever increasing car traffic (which needed better infrastructure such as enhanced streets). In order to try to manage the problems, Linköping employed a city architect, which was a very uncommon at that time (1912). His most acclaimed contribute was the general city plan which had similarities closely related to the municipal comprehensive plans of today. It described the long term visions of Linköping regarding the city’s expansions and comprehensive suggestions for future land use. Furthermore it also had several connections to the “garden city”, which will be described later on. As mentioned before, during the 1960s and 1970s with the “million-program”, a lot of residential areas were constructed in Linköping (for example Skäggetorp, Ryd and Ekholmen), with all the positive and negative outcomes still affecting us today. Other important contributions to the development of the city, was the establishing of Mjärdevi Science Park (around 1984) and Linköping University, which attracted and still attracts a lot of people from Sweden and abroad. In addition, Linköping has also gone from being a working class city to a city were the service sector is the largest and where the municipality of Linköping is the biggest employer (Linköpings historia 1900-talet, 1999).

Brief overview of the integration of sustainability in urban development

As can be visualized in the previous parts of the introduction, the earliest civilizations until today has underwent several transitions regarding both infrastructure and urban development (i.e. the aim of the city, management of water/waste, integration of sustainable development etc.). Transition (and the theory behind it) can be explained as “transformation processes in which society changes in a fundamental way over a generation or more.” (Rotmans, Kemp & Van Asselt, 2001:1). Our societal systems is not something that is static or permanent, but is changing from time to time (for example from one type of urban areas before the industrialization to another one during the industrialization). In order to improve the urban
development, these types of transitions (both smaller and larger ones) are of importance (De Haan & Rotmans, 2011). Furthermore, sustainable development needs modifications in socio-technical systems (transitions) as well as other changes regarding awareness and governance, in order to develop our societies further. Through transition management, this will result in that societies will gradually change in order to switch and break loose from existing technologies and urban development plans, which is needed in order for a more sustainable society (Kemp, Loorbach & Rotmans, 2007). The government and the politicians have a very vital role when it comes to steering this type of transitions, as they develop and adapt strategies and visions of how the urban development will be in their municipality. If the strategy and urban development is done in a clear way and if the municipality raise the awareness as well as get all its inhabitants to adapt to these strategies, the potential for integrating sustainable development in the urban development increases drastically (Rotmans, Kemp & Van Asselt, 2001).

Some examples of this type of transitions will be mentioned below. To handle a city’s social, economic and ecological problems (overpopulation, waste- and water management, emissions, green areas etc.), is not something that has been highlighted or worked with just in the recent decades. As mentioned earlier, several civilization had advanced ways to handle this, even though the actual severe problems emerged during the industrial revolution. There have been several ideas and theories regarding how to handle the urban development in a sustainable way and how for example managing the pressures and problems an increasing urbanization has upon cities. As early as the late 1800s, the author and inventor Ebenezer Howard come up with the concept of the “Garden City” (which was a combination of previous urban development proposals turned into one) (Hall, 1996) and which is closely connected to what we today call green urbanism (the creation of societies that are mutually favorable to humans as of the environment) (Seeliger & Turok, 2013). Besides the problems with a massive urbanization and lack of residences, the idea also arrived simultaneously with the expansion of the suburban areas and made the idea of the “Garden City” the first functional suggestion for how to plan the suburbs in an efficient way. Howard’s idea was to create a relocation of people from the already overcrowded, dirty and overexploited large cities, to the smaller newly established and more healthy cities/suburbs. Instead of that the land was owned by expensive private-owned lands (as it was in the large cities), this new lands would be owned by the inhabitants themselves through cooperative companies. The plan was that these smaller new cities would be developed into self-reliable communities, which wouldn’t be supported financially from the state (Rådberg, 1994).

Howard visualized the idea through resemble the people as a box of needles, which are attracted to three different magnets. The three magnets represent the town, the country and his own suggestion (the Garden city), which would combine the advantages from both the country and the city (so called town-country). Advantages with the town was high salaries and big job opportunities, whereas it was negative due to overcrowding and lack of green areas. Regarding the country, the advantages here was the beautiful and healthy environment, whereas on the negative side it lacked job opportunities and had relatively low salaries. The Garden city (town-country) was therefore an alternative that would have advantages from
both the town and the countryside (Hall, 1996). Each garden city would have its settlement situated around the central park (located in the middle of city) and in the middle of the park, public buildings such as hospital, town hall and library would be located. Furthermore, the plantation of trees in the city (along the streets etc.), was also something that were further introduced through the idea of the garden city (which is also something that are of importance of today). In the outskirts of the garden city, all the factories and industries was located, so they were close to the railways (which were connecting all the garden cities with each other). There were, however, some problems with the establishing of these type of cities. First of all it was an expensive investment to do, in order to create all the infrastructure (roads etc.) in this specific way. Secondly, it was hard to get companies to start up their business in the newly constructed cities, which was needed in order to create job opportunities which in turn was essential in order to attract people to the city. This meant that the cities were growing much slower than anticipated. From this period and forward several countries (including Germany, Great Britain and Sweden) have taken ideas from Howard’s the “garden city” and adapted it for some of their cities (i.e. Enskede and Norrköping, even though only some fragments still remain). Even though Howard’s idea of the garden city has lost some of it original parts during the last century, some of the parts like for instance the idea of maintaining green areas and creating class-mixed districts, still remain important elements of today’s city planning (Rådberg, 1994).

Childers et al. (2014) describe the transition from the industrial city (end of the 19th century and beginning of the 20th century) to the sanitary city, with more focus on the human health. This type of city, however, has an infrastructure and engineering solutions that in the majority of times are both inflexible and expensive. It also need considerable governmental investments in construction and maintenance of infrastructure i.e. a dominant focus on the technical approaches. Instead one possible city model could be the sustainable city, where the focus is changed from focusing on the human health to the human wellbeing. The sustainable city would have a more holistic approach were ecological and social aspects got equally important as the economic ones. According to the authors, developing and implementing a tool for a sustainable city, requires several things such as: understanding that a sustainable city doesn’t have a final step, but more of a process that keeps going and that are improved/adjusted as time goes by; knowledge regarding that urban areas are not simple places, but complex socioecological structures which require more than one solution for the city development etc. The process of creating a sustainable city must therefore be seen as a process with multi-faceted goals, which are shifting over time, instead of reaching a specific state (Childers et al. 2014).

**Methodology**

The methodology used in this paper was interviews, with a total fourteen interviews conducted (seven from each city). Before the interviews were conducted, a document research was done as a way to enhance the author’s information about the integration of sustainable development in Linköping and Norrköping. By investigating relevant documents (such as environmental plans, city planning documents and development plans), this was done in order to come up with relevant questions for the interview guide as well as being useful when it
comes to get out more information from the interviewees, through for example appropriate follow-up questions. The interviewees consisted of politicians, leading persons in the major housing companies (Stångåstaden etc.) and city planners, where four politicians, four persons from housing companies and six persons working with city planning (comprehensive plans etc.) were interviewed. The interviewees were selected due to that these persons all had important opinions to contribute with as well as all having an essential role of the urban planning process in the two cities. Regarding the number of interviews, fourteen interviews were selected as it was a doable amount to conduct during the limited time period of the study and generated a sufficient picture of the integration of sustainable development in the urban development.

**Selection of interviewees**
As mentioned before, 14 actors were chosen for this study and the seven actors from Linköping (without any internal ranking) were:

**Karin Elfström:** She’s the head of comprehensive planning in Linköping with a background as an architect. In 1989 she started working in Linköping and in the beginning her work was mostly related to detail plans, but after a couple of years she became the head of the comprehensive planning and has remained so ever since. Karin works with a lot of different projects and comprehensive plans and she’s also handling referrals and assists when it comes to knowledge support in different matters. (Interview 1)

**Oscar Lindberg:** He’s a comprehensive planner, who have worked in Linköping since four years ago. Oscar also works with several other projects/assignments connected the municipal government with i.e. national negotiations and with the project C Linköping. The aim of the latter one, is to coordinate the city development efforts and measures that are connected to one of the largest construction projects in the history of Linköping, namely Ostlänken (a high-speed railway which will go through both Linköping and Norrköping). (Interview 2)

**Muharrem Demirok:** He’s municipal councilor and member of the Center Party Board. He was earlier responsible for the environment and community development issues and is still working with city development in Linköping (vice chairman in the town planning board), even though he now is in the opposition (since 2014). Current projects that he’s involved in is: Ostlänken (negotiations of how and where the new Travel Center shall be constructed), Vallastaden and Övre Vasastaden (residential areas) and Ebbe Park (industry/business area). (Interview 3)

**Marie Hägglund:** She’s the team leader and project manager for a small department called “Environmental and sustainability communication”, which lies under the “Comprehensive planning department”. They work with both environmental issues in the administration but also environmental communication to the public (i.e. energy advices). Regarding sustainable development in urban planning, they also work with environmental issues such as for example developing a program for handling noise and sustainable development of the city (for example through a project called “Climate factors in Vallastaden” which is cooperation with Linköping university). Marie describes their work as being a support and an extra push for the other
departments, when it comes to further include sustainability and environmental issues in their processes. (Interview 4)

**Stefan Eriksson:** He’s the vice chairman of the Construction and Environment Board (he was the former chairman of the Construction and Environment Board), which belongs of the two previous boards that were merged together for a better efficiency (the Board of Construction and the Board of Environment). He’s also the group leader of the environment committee, of which now is called the Alliance (as he’s a member of the party Moderaterna). Stefan have worked quite a lot with environmental issues (especially with energy issues) and he’s also the geographic committee of Skäggetorp, which can be explained as a district council without power, which is a committee of the city council (11 in the municipality of Linköping). (Interview 5)

**Therese Furhoff:** She’s the quality manager of Stångåstaden (a municipally owned housing company, which is the largest in Linköping with 18600 mixed residential houses and apartments) and the head of the unit for quality and sustainability. According to Therese “the overall responsibility of sustainability” lies with her and she has been working for the company since 2012. Current projects that she’s involved in, is: two major urban development projects in Skäggetorp and Ryd, where a large focus is on social aspects (further integrate them with the city and increase security in the neighborhoods). Other important and present projects concern energy efficiency and waste management, where nudging is one of the tools used (changing behavior among their tenants). (Interview 6)

**Emma Johansson:** She’s a sustainability coordinator at Lejonfastigheter, which is a municipally owned company responsible for maintaining and meeting the need of the municipal’s and other public organizations’ premises and buildings (schools, sports facilities, preschools, retirement homes etc.). She has been working as sustainability coordinator for about a year, but she have been working with environment- and energy issues for approximately eight years. Lejonfastigheter has several projects going on at the moment (both smaller and larger ones), but one of the largest is the construction of a new public indoor swimming facility, which is huge investment for the municipality (750 million SEK). (Interview 7)

The seven actors from Norrköping (without any internal ranking) were:

**Christian Widlund:** He’s the political secretary of Region Östergötland and the first vice-chairman of the City Planning Board. In addition, he’s also the vice chairman of the Center party in Norrköping and before he worked as a logistician. Christian is currently working with several projects and detail plans, but one of the larger project is Nya Hamnen where a lot of new residences are to be constructed. (Interview 8)

**Wilhelm Hardt och Anna Malmberg:** Wilhelm is responsible for the environment- and security issues at Hyresbostäder (a municipally owned housing company, which is the largest in Norrköping). He has worked with security issues for five years and since last autumn with environmental issues. Wilhelm’s current project, when it comes to environmental issues, is an ongoing investigation of how Hyresbostäder handle their own waste, hazardous waste and chemicals and that this is being done according to regulations of the Swedish environmental
Anna is a project leader at the energy section at Hyresbostäder, with the orientation of behavioral issues (energy consumption, not the technical part). She has been working at Hyresbostäder for ten years with different types of things and at the energy section for two years. Anna’s current projects are quite connected to children and adolescents and to increase their knowledge and awareness about energy consumption and what kind of effects that an increased consumption has on the world. One of these projects are called “Myggnätet” and is a collaborative project between the municipality of Norrköping, Hyresbostäder and Norrköping water and waste company and is directed to children between 4-9 years old. Furthermore, Anna’s section is also working with informing their tenants (live visits, mails etc.) of how they can lower their water and energy consumption and thus both save money and the environment. (Interview 9)

Micael Antamo: He’s a CEO of the newly established company “Norrköpings kommuns Lokalförvaltning AB” (established at the last year-end), which is a company merged from two other businesses, namely “Samhälls- och eventfastigheter i Norrköping AB” and “Lokalförsörjningen” (which previously was a part of the City Planning Office). The reason for this was to get things to work out better and be more efficient than it has been before (as it was divided between different departments before). The company handle, build and develop municipal buildings where municipal activities are carried out (i.e. schools, preschools, retirement homes, gymnasiums), with the exception of residences (kind of the equivalent to Lejonfastigheter in Linköping). Before this, Micael was the property Director of Region Östergötland for several years. (Interview 10)

Mårten Arnberg: He’s a member of the City Planning Board and the chairman of the new company “Lokalförvaltning AB Norrköpings Kommun”. Besides this, he was also a part of the group which aim was to increase the construction of residences, which was at precarious state in the early 2000s. This due to that the housing companies weren’t interested in investing/building residential areas in Norrköping, as they didn’t think it would give any financial returns etc. By contacting all the housing companies in Norrköping and discussing the situation with them (why they didn’t want to build etc.), several ideas were brought up and some of the housing companies build some houses to examine the demand. It turned out to be a quite a large demand from people, which was ready to invest the money needed and after that more and more housing companies start to invest and construct residences in Norrköping. (Interview 11)

Linda Apelgren: She’s a process manager for the comprehensive plans in Norrköping, which she has been working with since 2008 (a total of twelve years in the Office). Linda is the supervisor, who makes sure that the comprehensive plans are made, that they have a good quality and that they are made in time, so the politicians have them as basis for their decisions. She also works with referrals and cooperates with other communities. Linda is currently working with a comprehensive plan for the countryside and the city (at this moment they’re out for consultation), i.e. a comprehensive plan for the entire municipality. Another project is Bråvalla, where there are big opportunities for residential areas but several interests to be handled (for example the Bråvalla-festival). (Interview 12)
**Kicki Liljeblad:** She’s a municipal councilor responsible for the community planning and was elected in 2014. In addition, she’s also a member of the municipal government where she is responsible for the comprehensive plans (it’s currently two comprehensive plans out for consultation concerning regarding the countryside and the city). Other current projects are the Inner Harbor and Ostlänken, which are both big and important projects for the city, and to find land for people who wants to settle down or establish businesses in the municipality. (Interview 13)

**Julia Stenström:** She’s a comprehensive planner, who has worked with this in Norrköping for five years. Julia is currently working two different projects, one detailed comprehensive plan for Bråvalla and one comprehensive plan for the city. The Bråvalla area has a huge potential for residences, as it has an area that is almost as big as the inner city of Norrköping. There’re, however, several conflicts of interest concerning the area, as there are both agricultural lands and areas with high environmental value. Julia is therefore compiling all the opinions and suggestions received during the last consultation, before it’s the comprehensive plan is going out for the second and last consultation. (Interview 14)

**Description of method**

According to Bell (2006) there are three different kind of interview strategies, namely structured interviews, semi-structured interviews and unstructured interviews. For this study, the semi-structured interview has been chosen, which can be seen as a middle ground between structured and unstructured interviews. The interview method is based on prepared questions, but with the opportunity to ask follow-up questions, which will make the answers more fruitful and useful. As the interview is based on prepared question (unlike the unstructured interview method), this will also make the analysis of the conducted interviews easier (Bell, 2006). The choice of the semi-structured interview method is also due to that the author of the paper is not a very experienced interviewer and therefore it’s comfortable to have some kind of template that can support me during the interviews. Furthermore, as the interviewees had different kind of expertise and background, it’s also appropriate to have semi-structured method as for example the structured method will need the interviewees to have similar backgrounds and expertise (Lantz, 2010).

In order to have clear and efficient interviews, an interview guide with questions connected to the aim and research questions of the paper was created. The questions was divided according to different themes, in order to make the analysis of the interviews easier. The themes were: “Current situation”, “Obstacles” and “Future possibilities”, of the integration of sustainable development in urban development. In addition, the author also had to consider the questions carefully, as for example “yes” and “no” questions are not optimal questions, as they are really hard to analyze (Lantz, 2010). Furthermore, the author also had the intention to make questions that weren’t too large or too complicated (using complex abbreviations etc.), due to the possibility of uncertainty and generation of poor answers. Another important step was to test the interview guide and to perform an interview with another person before the actual interview with the politicians etc. (Trost, 2010). After the interviews was conducted (which all were recorded), they was transcribed in order not miss or misinterpret the interview materials. After that, a qualitative content analysis was used, which is suitable when the
method used is not a quantitative one (for example when the data is collected and calculated). By using themes in the interview guide/interviews, this facilitated the analyzation of the interview material, where the answers was divided accordingly. This made the result and discussion parts much easier to conduct, as a clear comparison between the interviewees’ could be done efficiently (Bergström & Boréus, 2005).

Regarding the study’s validity and reliability, this was also important to have in mind when conducting this study. The reliability of the study, was enhanced by trying to prevent bias in the questions (for example by not asking questions that are skewed and directed to get a specific answer) or that the interviewee gives an answer that the person think is the most appropriate one, even though it might not be their personal opinion. The key here is to find some kind of balance between being too passive or too active during the interviews as well as trying to have questions that are neutral (Holme & Solvang, 1997). Regarding repeatability, this is quite tricky due to that people aren’t static in their opinions. If someone would try to do a similar study as this one later on, it’s possible that the opinions and answers have changed among the interviewees. Furthermore it’s important to give the interviewees the opportunity to take part of the transcribed material as well as the final paper and that the interviewer can return to the interviewees with questions about the interview material (for example if any clarifications have to be done). When it comes to validity of the study, interviews is the most appropriate method for this study as this study required more depth in the answers as well as the capability to bring up follow-up questions. This is for example not possible in a questionnaire, where the answers are written down by the respondents without the presence of the interviewer and it also can be difficult to make a deep analyze of the answers (Trost, 2010).

Regarding ethics and integrity, this is also something that is important to have in mind as an interviewer. To begin with it’s important to clarify the aim of the study for the interviewee, so the respondent is acquainted to what they are a part of and why they are selected. Furthermore all the interviewees had the opportunity to be anonymous as well as had the opportunity to read through both the transcribed material as well as the final paper. By doing this, the interviewees was assured that their opinions are accurate and not misinterpreted by interviewer. If the material doesn’t match with what the interviewees brought forward during the interview, they then have the opportunity to adjust this (Holme & Solvang, 1997).

There are of course several shortcomings with interviews as method and besides the ones already mentioned (possibility of bias, too complicated questions etc.), conducting interviews is a really time consuming process. First designing an interview guide and come up with questions, then testing them, identify persons for the interviews, book appointments with the interviewees, conduct the interviews, transcribe interviews and then interpret and analyze them. All these steps take a lot of time and require a clear timetable that is followed strictly. Due to that it’s time consuming, too many interviews can’t be conducted which lead to that a small amount of people will have to represent a larger amount of people. This is for example not the case when using questionnaires, as these can be distributed to a huge amount of people (Bell, 2006).
Reflection of outcome

The process of finding, contacting, booking an appointments, perform the interviews and transcribing them, proved to be both a complex and time-consuming process. First of all to find the right person to interview was very tricky, as phone numbers and email addresses sometimes couldn’t be found. Another problem was to get in touch with the most suitable person as even though the description of their title seemed to be connected to the topic, some of them were not able to contribute enough for the study. However, during the contact with possible interviewees, other persons who hadn’t been considered/found were discovered (through tips regarding persons or department that were more connected to the topic). In addition, there were also problems concerning finding appropriate appointment times as both the author’s schedule and the interviewees’ schedule had to match. This also affected the selection of interviewees, as some persons that was planned to be interviewed had a too busy schedule. The intention from the beginning was to only conduct live interviews, but as several actors didn’t have time for that and due to logistic aspects, some interviews were conducted by phone. Otherwise, the process of gathering, transcribing and analyzing data was going according to plan, even though it was more time consuming than expected (especially when it came to transcribing the interview materials).

Results

In this section the results of the study will be presented according to the three themes “Current situation”, “Obstacles” and “Future possibilities”.

Current situation

In this part, I will describe how the current situation in Linköping and Norrköping is when it comes to integrating sustainable development in the urban development and also give some examples of ongoing projects that are connected to these issues.

Linköping

The interviews from Linköping are indicating that the urban development have been improving during the last decades and that the municipality has a good financial situation as well as doing a very good job when it comes to its environmental work (biogas production etc.). Furthermore it’s also a fast growing municipality, which is likely to increase further in the future due to the increased immigration. This is also necessary in order to accomplish the goals of the “Joint comprehensive plan for Linköping and Norrköping”, which aim is to create a social, ecological and economic sustainable region where Linköping and Norrköping are more efficiently connected (by for example Ostlänken) and suburbs are developed and expanded. One of goals are also to increase the population in the region to 500 000 and the amount of jobs to 220 000 by 2030, which will require 80 000 more inhabitants and 30 000 more jobs compared to the 2009 levels. Another important part of the plan, is that the travelling centers in Linköping and Norrköping are moving and that the areas connected to these new travelling centers will be further developed (Linköping municipality & Norrköping Municipality, 2010). All the interviewees mention that it’s a large pressure on the municipality due to the growth of population, which have led to lack of both residences and public facilities (such as schools, preschools and retirement homes).
Lindberg thinks that it’s a good that Linköping have changed their strategy for how the city shall grow, which have gone from growing south and elongated to a more circular form where different city districts are more linked and connected to each other. This is something that he thinks is very important in order to get a more long term sustainable city, even though it means that the projects and comprehensive plans are a little bit more complicated and time consuming. Lindberg is also mentioning that Linköping has a comprehensive plan for traffic and transports, which main aim is to change the now existing transport distribution. The idea is to lower the percentage of car traffic and increase the percentage of public transport (bus etc.), bicycles and pedestrians. This not only requires infrastructural investments, but also to make it more difficulty for cars to travel in the city (by for example only have one lane) (Lindberg, 2016). Hägglund and Elfström are also mentioning this and point out the importance of both changing the distribution of transports as well as changing the public’s behavior regarding both transports and other issues (i.e. get people to do more environmental friendly choices) (Hägglund 2016; Elfström 2016). This is also something that is discussed by Furhoff and Johansson, which are, inter alia, giving the example of nudging (how to change people’s behavior/choices) as a good tool for increasing awareness among the public (in this case among the people using their facilities) (Furhoff 2016; Johansson 2016).

Demirok is explaining that due to that Linköping have had a different history compared to many other cities (such as for example Norrköping and Örebro), this have affected the conditions for how Linköping can work with its urban development. Norrköping and Örebro went through a type of industrialization, that Linköping never did which have created different city structures. In contrast to for example Norrköping who has a relatively clear and dense city structure, the city of Linköping has a more flat and scattered city structure. According to Demirok, this makes it much harder for Linköping to later on build denser and higher as well as more difficult to connect the city’s districts with public transport. From positive perspective, the flatness of Linköping makes easy to connect different districts with bicycle- and pedestrian paths as well as being a green city when it comes to the inhabitants’ proximity to green spaces (Demirok, 2016).

Regarding how the actors in Linköping interpret and work with sustainable development, it’s clear that the actors think about the three pillars of sustainable development (social, ecological and economic) and in order for the urban development to be sustainable all of these three have to be included in the process. It’s also distinguishable that the actors think that both the economic and ecological perspective are being handled relatively efficient, but that the social perspective is very complicated to work with. Demirok argues that the concept of social sustainability is complex and that it therefore is interpreted differently among different people (Demirok, 2016). Several of the interviewees are mentioning Skäggetorp and Ryd, as districts where it’s especially important to work with the social aspects. This due to that for example Skäggetorp was built during the “million-program”, when the focus was to build big volumes but where other aspects were neglected. This has made Skäggetorp relatively isolated from the city due to its location and construction, making it hard to change/improve (as the district is already there) (Elström 2016; Demirok 2016; Eriksson 2016). Regarding the cooperation and involvement of different stakeholders (which is essential in a sustainable urban development), this something that the actors think is done relatively well, even though there is
some suggestions for improvements. The cooperation with Norrköping is also working out relatively well, even though there were increased cooperation before, during the creation of the “Joint comprehensive plan for Linköping and Norrköping”.

**Norrköping**

The interviews from Norrköping indicates that urban development is going in right the direction and several projects and constructions are being done. Even though Norrköping have lack of residences and municipal facilities (schools, retirement homes etc.), a lot more constructions are being planned and constructed nowadays compared to a couple of years ago. Liljeblad points out the importance of finding a balance regarding both constructing enough residences to meet the needs but also to maintain and preserve green areas in the city (which is also of vital importance for the city) (Liljeblad, 2016). Antamo reveals that Norrköping have been growing a lot recently which wasn’t really the case before and this have created a pressure on Norrköping to meet the needs of residences and municipal facilities, something that the city at first wasn’t prepared for. Furthermore he also highlights that even though planning and construction have to be sustainable and have a long term perspective, there are large demands at this very moment, which means that it can’t take a too long time to establish these facilities (i.e. there have be balance there also) (Antamo, 2016).

The strategy for the city of Norrköping is to build from the inside and out, in order to decrease the possibility of isolation of districts (Widlund 2016; Liljeblad 2016). Arnberg explains that Norrköping has had its characteristics from the industrialization and that the inner city of Norrköping is considered a national interest which is something that should be preserved. On the other hand, it’s important that Norrköping is being renewed and developed in order to meet the growth of people etc. It’s therefore important to have a balance between these two, when developing and expanding the city (Arnberg, 2016). Stenström agrees with this and points out that the focus when it comes to three pillars of sustainable development shifts over time and at present, the social sustainability are high on the agenda. It’s essential that this is integrated in the planning at an early stage, in order to not get isolated and segregated districts which later on are difficult to manage (Stenström, 2016). Social sustainability is also something that Hyresbostäder highlights as something very important, as Hyresbostäder has around 30 000 inhabitants living in their residential areas, and therefore have a large role in Norrköping’s work with sustainable development (Hardt & Malmberg, 2016).

Arnberg, however, thinks that Norrköping is a relatively compact city with no extreme areas (which is visible in other municipalities) and that the connection with the inner city are pretty good. From an ecological perspective, however, it’s tricky to for example change the percentage of cars in the city, as the city still has the same 1800s structure (regarding streets etc.) (Arnberg, 2016). Apelgren agrees with this, but point out that this can be improved, by for example link different districts even more with extra streets and public transport (Apelgren, 2016). Widlund also mentions that it’s important to build mixed residential areas (i.e. that there are a different types of residences in a district), as this this will attract different types of people and thus avoid segregation. Another important part is also to build environmentally friendly houses, where good materials are used and which are more energy efficient (Widlund, 2016). Another challenge (which is all over Sweden), is how to handle the
residential areas created through the “million-program”. This due to that they’re both old and need to be renewed when it comes to energy efficiency, which demands huge renovation costs. This must of course also have to been seen as an investment, as it will lead to both economic and ecological advantages (Hardt & Malmberg, 2016).

The actors in Norrköping, also have the three pillars of sustainable development (social, economic and ecological) in mind when they are thinking and working with sustainable development in the city development. Stenström and Apelgren are describing it as that the society shall develop but in a sustainable way where future generations have the some possibilities and resources as we have today (if possible even better) (Apelgren 2016; Stenström 2016). Regarding the cooperation and involvement of different stakeholders, this is something that most of the actors think is done rather well, even though there is some suggestions for improvements. The cooperation with Linköping is also doing relatively well, even though (which also was mentioned by the interviewees from Linköping) there were increased cooperation before, during the creation of the “Joint comprehensive plan for Linköping and Norrköping”.

Obstacles for the city development

In this part I will describe what kind of obstacles that the interviewees think exist in order to improve and make the urban development more sustainable.

Linköping

The interviewees from Linköping highlight several obstacles that stand in the way for the urban development to be more sustainable. One of the things are the existing legislations and regulations, which for example Demirok and Johansson think should be much stricter. Demirok explains that the government of Sweden has put the environmental requirements on a moderate level in order for every municipality to be able to manage it. For a municipality as Linköping, who is already doing a very good environmental, work this has resulted in that Linköping is doing a lot more requirements than needed. This means that companies and organizations just need to achieve the requirements assigned to them by the Swedish government, resulting in that many companies actually can lower their environmental requirements and still be able to manage the requirements from the government (Demirok, 2016). Johansson mentions that the municipality of Linköping should make their designs/layouts much more clear and that one way to handle this would be to have a better cooperation with for example Lejonfastigheter in order to clarify and get stricter environmental requirements in the procurements. Occasionally, the procurements are designed according to their environmental requirements, thus making it hard to implement stricter environmental demands (Johansson, 2016).

Another obstacle is environmental communication and how to get everyone in the municipality to play their part i.e. to raise awareness and motivate people and companies to together work for a more sustainable urban development. Hägglund points out that even though the municipality do a lot of infrastructural changes, there also have to be willingness among the public to adapt to these changes (for example to change from car to bicycle) (Hägglund, 2016). Furhoff agrees and means that one of Stångåstaden’s biggest challenges is
how to get all their tenants to join them in their sustainability work (Furhoff, 2016). Demirok argues that there’re no limitations regarding obstacles, but that most of these obstacles are in the “mind of the people”. He points out that “the majority of all the obstacles are not created as obstacles but are created in order to protect or preserve something, but when putting all these together they become obstacles”. One example of this was a farmer who had maintained his lands in such an exemplary way, that his lands had too much biodiversity so he wasn’t allowed to build anything in his own land (Dемiroк, 2016).

Several interviewees mention conflicts of interest and conflicts between the three pillars of sustainability as obstacles (i.e. it can be hard to weigh all the three perspectives equally in every project). This leads to that it from time to time is necessary with exceptions i.e. one of the pillars maybe can’t have the same priority as the other ones. Lindberg mentions that it’s maybe not economically sustainable for an organization to situate themselves in the inner city, but more suitable for them to move to Tornby (a place located a little bit outside the city and where several other big companies are situated). On the other side, this may not be that good from an ecological point of view (for example when IKEA was established in Linköping, their facility was constructed at an area with rare water salamanders). However, the more exceptions you make for different organizations, the more is the city departing from the strategy of building tight and compact in the city. Lindberg therefore propose “that in every single decision you need to see the big picture and see that the more things we believe could be somewhere else disappears part of the whole. It is the holistic approach that combines energy and transport demand and there is the challenge that I see, regarding sustainable urban development.” (Lindberg, 2016).

Eriksson also mention the conflict of interest between arable land and the need for construction/expansion. He means that even though it might be really tempting for city planners to build in these lands, other lands with less quality should be considered, as the arable lands we have in Sweden are some of the best in the world and if they’re constructed upon, they can’t be restored later on. Eriksson also point out that due to the increasing population and amount of refugees, many of the plans that are being planned now are focusing on volumes. Even though it’s needed, only focusing on volumes is not sustainable, as it will create similar districts that was established during the “million-program”. Thus creating these social problems which can be seen in for example Skäggetorp and Rosengård (i.e. insecurity and segregation) (Eriksson, 2016). Other obstacles mentioned are: come up with a clearer definition of social sustainability (very vague definition now which makes it hard to work with), better cooperation between different actors of the municipality, impact from the airport (can’t build to high) and flexibility and predictability in the detail plans (too strict detail plans makes it hard to adapt/improve a district).

**Norrköping**

The interviewees from Norrköping highlight numerous obstacles for making the urban development more sustainable. Apelgren mentions that there’re a lot conflicts of interest that have to be handled (such as how to handle the lack of business lands but on the same time preserve the arable lands etc.). Furthermore, Norrköping also have an airport which makes it hard for the city to build high buildings and the city also have a lot of “dirty” industries which
makes it hard for Norrköping to develop these industrial areas (due to that they are too polluted) (Apelgren, 2016). Another problem according to Arnberg, is how to handle the issue of increasing the public transport, due to the old city structure which makes it hard to manage (Arnberg, 2016). Stenström highlights that due to a large increase in population during the recent years, it’s essential to clearly have the sustainability aspects in especially the comprehensive plan. This due to that the comprehensive plans gives a more holistic perspective of the city, while with the detail plans it can be hard to see the whole picture (i.e. how a specific district interact with other districts) (Stenström, 2016).

Liljeblad also argues that there are conflicts of interest regarding preserving certain older buildings, where some think they should be preserved whereas others think they should be transformed into residences. Another aspect is also to have the future perspective in mind while planning and for example plan for the possible consequences of climate change, which can be a conflict with persons who have a more short term thinking (Liljeblad, 2016). On the other side, Antamo also highlights that there have to be a mix of short term and long term thinking when planning a city, as Norrköping are in need of residences right now which means that it mustn’t take too much time to establish these facilities (Antamo, 2016).

Cooperation within the municipality is also something that numerous actors believe has to be improved. Hyresbostäder point out that the municipality of Norrköping should be tougher when it comes to put pressure and demands on different companies and that supervision should be done more often and systematically, which will lead to continually improvements (Hardt & Malmberg, 2016). Several of the interviewees also highlight the importance of that all inhabitants have to play its role, in order to make the urban development more sustainable. Even though for example one comprehensive plan is pointing at one direction, the property developers also have to have this perspective, i.e. an interest to build more sustainable. Another obstacle mentioned are how to handle the communication issue, for example how to overcome language barriers in district where a lot of foreigners are living.

Suggestions for improvements

Linköping

The interviewees are pointing out several suggestions for improving the current situation. Hägglund highlight one of her projects as a future possibility to improve the sustainability issue in the city planning. Her project is called “Climate factors in Vallastaden” and is about developing an sustainability certification for a district instead of certification for a facility (which is much more common). This have been applied to the upcoming district of Vallastaden, which is a district very directed to the sustainable perspectives (Hägglund, 2016). Demirok explains that the district have been developed in a way so people have to meet each other i.e. as a tenant you have to go through for example the bicycle room in order to get out from residential area and Vallastaden also have more entrances which creates meetings. This is otherwise a problem, that people in neighborhood doesn’t know who their neighbors are, but by creating meeting places this is one way to handle alienation (common houses are another meeting place that have been introduced to Vallastaden). Other interesting aspects of Vallastaden is that it’s constructed by many property developers, creating a more living district as well as is designed in a way so it’s impossible to reach the residences with car,
creating relatively car-free neighborhood. Demirok also mentions the importance of building correct from the beginning and that the current lack of residences gives a huge possibility to make structural changes, where for example building ecological by using wood (which is almost an abundant resource in Sweden) could be a very sustainable approach (Demirock, 2016).

Johansson highlights the importance of a shorter process when it comes to from the starting of a comprehensive plan to completed facilities and that the real estate companies should be part of the process much earlier. She also request cooperation and forum for sustainability, which she thinks that Lejonfastigheter could play an important role in (Johansson, 2016). Hägglund also thinks that it should be more environmental and sustainability issues throughout the process and that it’s ensured that it will not fall away i.e. it permeates the whole process (Hägglund, 2016). Lindberg believes that it’s important to visualize and to examine which one that have which responsibility in the urban development process, as there is no single actor responsible for the whole process. By clarifying this, the process might become more efficient and sustainable (Lindberg, 2016). Eriksson highlights that even though it’s important to build new residences, the greatest climate benefits are achieved by renovating older buildings. This by for example making them more energy efficient, rebuilding them, rebuild other forms of facilities such as old industrial buildings etc. (Eriksson, 2016).

Demirock is striving for a clearer vision for the city and that “instead of saying that we need x percentage of parks and x percentage of this, you should have a clear idea of what you want with the city etc.” Furthermore, he thinks that Linköping is missing clear urban character where more densification are needed (Demirock, 2016). Eriksson suggests that Linköping should add more floors to the buildings in town which more efficiently would add more residences, as the maximum height (due to the airplanes) still can be added several more floors. Using the roofs for trees, bushes and flowers is also something that could be improved and could provide Linköping with several thousands of sq.m. of park (Eriksson, 2016).

**Norrköping**

The interviewees are highlighting several suggestions for improving the current situation. One project that are widely mentioned is “Inre hamnen”. It be explained as a property developer interaction where eight property developers are involved in the project from the beginning and discuss the whole area together i.e. more efficient district planning. Hyresbostäder is arguing that the work with social sustainability will be even more important in the future and that it’s important that work with this continues (i.e. how to manage language barriers and prevent segregation). One example of their work with this is that they have introduction hosts that are speaking a lot of languages and thus helping people to better integrated in the society (Hardt & Malmberg, 2016).

According to Liljeblad it’s important that it’s not only areas of the inner city that property developers want to build, but also in the suburbs (the area of Bråvalla etc.). In order to make it more sustainable it’s also important that they build on what already exists i.e. using roads and water that are already available. It’s also important to have in mind that even though social sustainability is of great importance, the other parts are as important and that it shifts over
time regarding focus on which pillar. According to Liljeblad Norrköping grew with up to 1700 people last year (immigrants and newborn) and it’s essential that “you plan what age they are i.e. will there be children in the near future? Then we need to build kindergartens. Which areas will they move to and will they remain in the city?” All this in order to be able to strategically planned the city and locate facilities in the most suitable places (Liljeblad, 2016) This is something that Antamo agrees with and highlight that it’s important to plan for future events, for example “in ten years it will this amount of baby boomers in this area and this therefore will require extra preschools/schools which means that we already now need to start thinking and planning about that” (Antamo, 2016).

Arnberg highlights that it’s important that the municipality both build new residences and renovating the older ones (old industries and residential areas from the “million-program”). Another essential aspect is to build mixed residential area where a lot of diverse people can live and also to have residences for higher and lower costs in order for all people to be able to have access to residences. He agrees that this is a challenge, but that Norrköping at the moment are handling the demand of 1000 residences per year (Arnberg, 2016).

Discussion
In this part the results will be interpreted and discussed connected to the aim of this paper.

It’s clear that a city’s historical background and structure has a great impact on a city’s capability of develop and expand. Even though Linköping and Norrköping have relatively similar amount of population, they both have different conditions due to diverse historical backgrounds and paths of transition, resulting in that the cities have different positive and negative aspects to handle. Riddell (2004) explains this as the solutions of yesterday, now have become the problems of today. Due to that Linköping didn’t went through an industrialization as Norrköping, Linköping have a more scattered city and have to handle its urban development according to that. Norrköping who is well-known for being an industrial city, have a much denser but have on the other side problems with its relatively narrow streets and the remains from the industries (both empty old industry facilities and pollution), which also creates challenges for Norrköping (Demirok, 2016). Childers et al. (2014) point out that there are two different kinds of solutions regarding handling urban sustainability challenges and transitions. The first one are solutions which “tweak” already existing systems (institutional or infrastructural) whereas the other one are solutions that necessitate new systems (i.e. transformative). The question is then which one that is adaptable to which city, as the first one require a city to be flexible and adaptable. Both Linköping and Norrköping are aiming for the “tweaking” solutions as they are trying to adapt/improve their current city structure and system in order to handle their urban development. It’s interesting, however, when it comes to the “million-program” areas in the both cities, as the existing structure and system in these areas are very hard to “tweak”. Therefore it’s possible that more transformative solutions are needed, in order to handle these districts. From the brief description of the history Norrköping and Linköping it’s though clear that both the cities have underwent several transitions which have shaped how the cities are today and what kind of possibilities they have, when it comes to adapt future changes and challenges. In addition,
both municipalities have connection to green urbanism and the garden city. This in the sense that they are both working with sustainability approaches where for example urban green areas have an important part in their urban development combined with class-mixed residential areas (i.e. partly connected to the concept of the Garden City).

According to Hassan and Lee (2015), the transportation issue plays a vital role when it comes to sustainable development and except having itself a great impact on a city, it also affects other aspects. Handling the transportation issue will therefore have positive impacts in other areas as well (Hassan & Lee, 2015). How to manage the transportation is also something that the majority of interviewees highlight as a very essential but tricky part of their urban development. This will not only reduce a city’s pollution, but also from a social aspect connecting different districts more efficiently. Naess (2001) agrees with this and point out that “Rather than depending on niche innovations, a transition toward a more sustainable urban development is a matter of changing the composition of existing multi-segmented land use and transportation regimes.” (Naess, 2001:16-17). Linköping and Norrköping have different obstacles when it comes to the transportation issue, as Linköping is not as dense as Norrköping (Demirok, 2016) but Norrköping have problems with its city structure which results in that the public transportation through town take too much time (Arnberg, 2016).

Another interesting aspect regarding sustainability in urban development is the conflicts of interest. One example that, inter alia, Eriksson discusses is the conflict between constructing new facilities and preserving land (Eriksson, 2016). Nilsson et al. (2014) point out that though densification in the cities are very essential (i.e. in order to more efficiently connect different districts and easily reach districts with public transports), green areas have a vital role in urban development as well. This due to that these areas contribute with several things, such as being vital for handling upcoming climate change events (i.e. limiting flooding due to water infiltration and against temperature changes) (Nilsson et al. 2014). Furthermore, the green areas also have a very positive social impact, as it except of being a gathering point for people, also is good for the health and stress issues. Thus it needs to have an important share in a city’s general development plan (Panagopoulos, Dugue & Dan, 2016).

Urban development also requires clear governing, where all actors in the city have the possibility to contribute and have opinions (through for example consultation etc.). This in order to achieve more sustainable and resilient cities (UNEP, 2013). What kind of role that the government should have is though divided, i.e. shall the government have the power to decide everything or shall responsibility be more divided between several stakeholders. According to Lindberg, this has been the case in Linköping where the municipality of Linköping took most of the decision (so called government) to more a negotiating role (so called governance), where the responsibility now is divided among several actors. This kind of process change have both positive and negative outcomes. As the urban development and goals connected to this are very broad and big, several stakeholders are needed in order to handle these issues. On the other hand, isn’t it better that someone has the crucial power to determine how the development shall proceed? (Lindberg, 2016). Pincetl (2010) also discuss this question and asks: “How can government ensure accountability in extended service networks where implementation responsibility is widely shared and where no one is truly in charge?” (Pincetl,
In other words, should the process of urban development be more or less democratic, where a less democratic approach probably would make the process less time-consuming (less conflicts of interest) whereas the more democratic approach is more sustainable, thus should be more appropriated in order to more efficiently integrate sustainable development in the urban development. Lindberg, however, highlights a significant aspect, when he points out the importance clarifying exactly what each of the stakeholder’s responsibility is, as this will make the work and cooperation more efficiently as well as reducing the risk of misinterpretations (Lindberg, 2016). Governing is something that is very important when it comes to transitions in urban areas, as the municipality have a key role regarding how the transition will be (Rotmans, Kemp & Van Asselt, 2001). Without a clear and long-term strategy where all its inhabitants have a part, it’s likely that the transition will go in the wrong direction (i.e. away from the sustainable development path).

Lastly it’s very vital that, inter alia, cities have a circular way of thinking when working with sustainable development in their urban development. As Basiago (1999) and Childers et al. (2014) highlight, the work with sustainability is an ongoing process that strives to improves as time goes by i.e. not a static, linear process which can be reached. This is also something that seems to be the case in both Linköping and Norrköping, as all the interviewees had ideas and suggestions of how to further integrate sustainable development in their city’s urban development. I though think that instead of being too much into details and percentage of how an area shall be, there should be more focus on what kind of area is this, what do we want to accomplish with the area and how can it done? This also something that both Demirlok (2016) and Riddell (2004) arguing for, as this is of more use to the urban development combined with that it’s easier for all stakeholders to get a grip of.

Conclusion

In conclusion, it’s clear that both Linköping and Norrköping working with integrating sustainable development into their urban development. The cities have different characteristics as a result of different ways of transition, which cause them to work a little bit differently with sustainable development. It’s though visible that the cities have similar interpretations of the concept of sustainable development and that at present social sustainability is the part needs be working more with. In order to more efficiently integrate sustainable development, there are several obstacles that needs to be handled, where the most highlighted obstacles are the transportation issue, conflicts of interests and cooperation between different stakeholders. Even though both the cities have several aspects that they need to work with, each city seems to have adapted efficient and suitable approaches to handle their own urban development.
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References


Pincetl, S. (2010). From the sanitary city to the sustainable city: challenges to institutionalising biogenic (nature’s services) infrastructure, Local Environment 15:1, 43 –58.


**Interviews**

**Linköping**

Karin Elfström, head of comprehensive planning, 2016-03-15.

Oscar Lindberg, comprehensive planner, 2016-03-21.

Muharrem Demirok, municipal councilor, 2016-04-07.

Marie Hägglund, team leader and project manager the section “Environmental and sustainability communication”, 2016-03-23.

Stefan Eriksson, vice chairman of the Construction and Environment Board, 2016-03-23.

Therese Furhoff, quality manager of Stångåstaden, 2016-03-22.

Emma Johansson, sustainability coordinator at Lejonfastigheter, 2016-04-11.

**Norrköping**

Christian Widlund, first vice-chairman of the City Planning Board, 2016-03-16.

Wilhelm Hardt (responsible for the environment- and security issues at Hyresbostäder) and Anna Malmberg, (project leader at the energy section of Hyresbostäder, with the orientation of behavioral issues), 2016-03-09.

Micael Antamo, CEO of the “Norrköpings kommuns Lokalförvaltning AB”, 2016-03-16.

Mårten Arnberg, member of the City Planning Board and the chairman of “Lokalförvaltning AB Norrköpings Kommun”, 2016-03-15.

Linda Apelgren, process manager for the comprehensive plans, 2016-03-09.

Kicki Liljeblad, municipal councilor responsible for the community planning, 2016-03-10.

Julia Stenström, comprehensive planner, 2016-04-07.
Appendix 1

Interview guide

1. Name?

2. Profession / title?

3. What is your direction in your work?

4. How long have you worked here?

5. Current project?

6. What do you think about the general situation in Linköping / Norrköping today (regarding, for example, the number of homes, schools, green spaces, etc.)?

7. What is your role in Linköping / Norrköping urban planning / urban development? What is being done from your quarters to make urban development more sustainable?

8. How do you interpret the concept of sustainable development and how do you use it in your work / urban planning?

9. How are ecological, social and economic factors integrated into your work / urban planning?

10. How is the interaction with the other actors? Is it sufficient / insufficient?

11. Do you collaborate with Norrköping / Linköping? What are the advantages of this? How is the cooperation? How can it be improved?

12. What are the obstacles / problems to further integrate ecological, social and economic factors in your work / urban planning?

13. What can be done to improve this in the future?

14. Future projects? What have you learned from past projects that help you to make urban development more sustainable?

15. Do you have something to add?

16. Do you want to take part of the transcribed material / finished essay?